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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,464	02/22/2002	Kanji Otsuka	011703	6674
38834	7590	02/10/2006	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			JONES, STEPHEN E	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4-D

Office Action Summary	Application No. 10/079,464	Applicant(s) OTSUKA ET AL.	
	Examiner Stephen E. Jones	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
 4a) Of the above claim(s) 4,5,12,19-21,24 and 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23,25,28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,13-15,22 and 27 is/are rejected.
- 7) ☒ Claim(s) 3,9-11 and 16-18 is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/20/06 has been entered.

Election/Restrictions

2. Claims 4-5, 12, 19-21, 24, and 26 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/20/06.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 13-14, 22, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Sochoux. (both of record).

Otsuka teaches a terminated bus including the identical transmission line structure as claimed (e.g. see Figs. 3 and 9).

However, Otsuka does not teach that the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb/dissipate high frequencies (Claim 1), that the resistor is a chip, or that the transmission lines are multiple pairs each having a termination (Claims 13-14). Otsuka also does not teach that the insulator in the vicinity of the resistor is mixed with magnetic material or the claimed adapted functional limitations (Claim 22), or that the magnetic material exhibits ferri-magnetic resonance (Claim 27).

Sochoux teaches a printed circuit board having a termination for a clock transmission line (i.e. digital bus) including a terminal resistor and a ferrite magnetic material (i.e. an insulator) in the vicinity of the resistor, and the ferrite reduces EMI (i.e. it absorbs high frequency electromagnetic energy). Also, the ferrite can be doped with a less conductive material (i.e. mixed with an insulative material) (e.g. see Col. 5, lines 16-24). Also Sochoux teaches that the termination can be formed as a package (i.e. a

chip) (e.g. see the abstract). Furthermore, inherently the ferrite exhibits ferri-magnetic resonance since all ferrites have such characteristics.

It would have been considered obvious to one of ordinary skill in the art to have substituted terminations such as taught by Sochoux in place of the generic terminations in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent termination means providing the advantageous benefit of improved EMI control such as suggested by Sochoux, thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Sochoux, because it would have provided the advantageous benefit of multiple transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, since Sochoux is silent as to the particular ferrite material and especially since the ferrite is for absorbing EMI, one of ordinary skill in the art would have been motivated to select the absorbing ferrite material to have a higher loss factor than the substrate so as to provide the advantageous benefit of EMI reduction in addition to the substrate material. Also, note that substrate materials are commonly made of low loss materials such as alumina (i.e. much lower than ferrites).

Also, since the combination results in the same structure as the presently claimed invention, as an obvious consequence of the combination it is adapted to be capable for functioning in the same manner.

5. Claims 1-2, 6-8, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Fukaya (both of record).

Otsuka teaches a terminated bus as described above.

However, Otsuka does not teach the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb high frequencies (Claim 1), that the insulator includes glass and modified ionized additive (Claim 2), that the resistor is a chip, that the transmission lines are multiple pairs each having a termination (Claims 13-14), that the insulator covers the resistor (claims 6-7), or that the insulator is a mixture of glass, resin and ionized additive (Claims 8, 15).

Fukaya teaches a chip resistor having a glass coating (i.e. an insulator). The coating can be CaO (i.e. an ionized additive like applicant's disclosure) mixed with an organic vehicle ethyl-cellulose (i.e. a resin) (e.g. see Col. 6, lines 1-8 and Table 2).

It would have been considered obvious to one of ordinary skill in the art to have substituted resistors such as taught by Fukaya in place of the generic termination resistors in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent resistor means providing the advantageous benefit of excellent weather resistance and stability (see abstract of Fukaya), thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Fukaya, because it would have provided the advantageous benefit of multiple

transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, one of ordinary skill in the art would have been motivated to select the coating material to have a higher loss factor than the substrate, especially since substrate materials and circuit boards are commonly made of low loss materials such as alumina (i.e. much lower than ferrites), and the coating material of Fukaya is the same as Applicant's disclosure. Also, as an obvious consequence of the substitution resulting in the same structure as the presently claimed invention, the coating would absorb high frequency electromagnetic energy and function in the same manner.

Response to Arguments

6. Applicant's arguments filed 1/20/06 have been fully considered but they are not persuasive.

Applicant argues that neither Otsuka or Sochoux disclose the high frequency electromagnetic energy entering the bus and reaching the one end because Sochoux is directed toward high frequency suppression by a source termination, and Sochoux teaches a different structure as compared to the present invention.

Applicant's argument is not persuasive, especially since Applicant is arguing the Sochoux reference alone rather than the combination with Otsuka. It is the Otsuka reference which teaches the general termination structure, and it is the Otsuka

reference that is modified in the rejections. Also, clearly the Otsuka bus termination is at the end in the same manner as the presently claimed invention.

Also, Applicant argues that neither Otsuka or Sochoux teach the insulator having a larger dielectric loss angle at least in the frequency region of the digital signal than said insulative substrate. Applicant argues that the examiner is using hindsight.

Applicant's arguments are not convincing. Sochoux teaches that the ferrite is for reducing EMI. For the ferrite to be useful for reducing EMI it must have a high loss factor and since the ferrite is added to the substrate for this purpose it would obviously suggest that it would be necessary to have a higher loss factor than the substrate, which are typically low loss, to provide desired EMI reduction (i.e. high frequency electromagnetic reduction).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, Applicant argues that neither Otsuka or Sochoux teach providing in the vicinity of the termination resistor an insulator mixed with magnetic material because

Sochoux teaches a material having "less conductivity" and the examiner assumes that less conductivity means low conductivity.

Applicant's argument is not convincing. The term "low" is a broad term. Sochoux teaches choosing materials having less conductivity which thus can be considered "low conductivity" since the conductivity is less than that other materials (i.e. since it is less than other materials it can be considered low relative to other materials).

Also, Applicant argues that Fukaya does not teach having a large dielectric loss angle, or absorbing high frequency electromagnetic energy.

These arguments are not persuasive. As stated in the rejections, substrate materials and circuit boards are commonly chosen to be of low loss materials which provide for optimal circuit conditions. The Fukaya coating can be CaO mixed with an organic vehicle ethyl-cellulose in an identical manner to the present invention disclosure which has a high loss factor thus providing the suggestion of a large loss angle as compared to a low loss substrate. Furthermore, the combination of Fukaya and Otsuka obviously would result in functioning to absorb high frequencies since the combination results in the same structure as the presently claimed invention.

Applicant also argues that the purpose, configuration and effect of Fukaya are different from the invention.

This argument is not persuasive. As demonstrated by the rejections and arguments above, the combination results in the same structure as is claimed.

In response to applicant's argument that the present invention has a different purpose or effect, the fact that applicant has recognized another advantage which would

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flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Allowable Subject Matter

Claims 3, 9-11, and 16-18 remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Claims 23, 25, 28, and 29 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEJ


STEPHEN E. JONES
PRIMARY EXAMINER